DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 1/3/2008, with respect to the rejection(s) of claim(s) 1 – 20 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rakib.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2,4 - 8,10 – 13 and 16 - 20 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (US Patent No. 6,434,171) in view of Sullivan, patent number: US 6 662 365 BI in view of Kato. (Patent No. 6, 233, 255) in view of Rakib, patent number: US 6 857 132 B1 and in further view of Carlucci, publication number: US 20040244058 A1.

Consider **claim 1,** Ishida clearly teaches "An MPTS-SPTS separation device in a digital broadcasting system (Fig. 1), comprising:

a receiving interface (11) for receiving an MPEG-2 MPTS (Multiple-Program Transport Stream) combining a plurality of programs, provided from a digital broadcast program provider (the multiplexers 11i – 11m, which are identically constructed, multiplex audio/video MPET-2 TS of a program, which is selected from a number of MPEG2 transport stream, col. 4, lines 55- 58); an MPTS-SPTS separator (Fig. 1, Fig. 2 further explanations Fig. 1) for

a) detecting a PAT (Program Association Table)(Fig. 2, 21d) packet from MPEG-2 MPTS data provided from the receiving interface, (By referring to the PAT and PMT in the service information, the PAT/PMT analyzers 21d obtain the packet identifiers, col. 5, lines 27 - 30)

b) analyzing PIDs (Program IDs)(Fig. 2, 21d) of a PMT (Program Map Table) that correspond respectively to a plurality of programs existing in an MPEG-2 MPTS packet. (PAT/PMT analyzers 21d obtain the packet identifiers PID of the audio/video streams of the designated programs, col. 5, lines 29-31)

c) receiving information of a single program selected by a user via a receiver connected to PAT Extractor/Parser (Fig. 1, 3. The CPU (in the DSTB) controls the demultiplexer based on program selection…selected by user, col. 8, lines 32-36, PAT/PMT analyzers 21d obtain the packet identifiers PID of the audio/video streams of the designated programs, col. 5, lines 29-31),

d) removing packets associated with all programs other than the selected program(Fig. 2, 21a. PID filter separate the video streams and audio streams of designated programs from the entered MPEG-2 TS, col. 5, lines 45-48)

Ishida does not explicitly teach:

c) receiving information of a single program selected by a user via a universal Asynchronous Receiver/Transmitter coupled to a PAT Extractor/Parser.

e) changing a PAT by deleting PIDs associated with said other programs from the PAT, while retaining PIDs of a PMT that are associated with the selected program, and

f) inserting the changed PAT into a stream corresponding to the selected single program; and a transmitting interface for transmitting an SPTS outputted from the MPTS-SPTS separator and wherein said selected single program is transmitted as digital video broadcasting- Asynchronous interface (DVB- ASI) data.

In an analogous art, Sullivan teaches receiving information via a universal Asynchronous Receiver/Transmitter (input system comprising a UART port, col. 4, lines 24 - 40).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Ishida's separating device by including a UART as described in Sullivan's reception system for the advantages of reducing the expense of long communication links sending several bits in parallel.

Ishida and Sullivan fail to teach the process of changing a PAT and inserting the changed PAT into a stream.

In a relevant field of endeavor, Kato teaches a system that selects a program from a stream of multiple programs. Kato also teaches:

e) changing a PAT (the program control information(also referred to as the PAT, col. 2, line 52) editing section as a program control information editing means, col. 20, lines 48-49), by deleting PIDs associated with said other programs from the PAT, while retaining PIDs of a PMT that are associated with the selected Program (program control information aborting sections, col. 20, lines 15-29 ...As described above, by aborting only all program control information from the bit streams received by the remultiplexing apparatus and only multiplexing again the program information packet from the program generating section and the packet containing the newly generated all program control information, col. 21, lines 27- 32), and

f) inserting the changed PAT into a stream corresponding to the selected single program (and transmits the remultiplexed packet as new program multiplexed information, col. 9, lines 21-22); and a transmitting interface (and transmits, col. 9, line 21) for transmitting an SPTS outputted from the MPTS-SPTS separator.

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ishida, Sullivan and Kato. The combination describes a system for conserving bandwidth by reducing multiple program transmission to a single or reduced number of programs to be transmitted. Kato's separation technique can be incorporated into the combination of Ishida and Sullivan by using the procedure as shown in Kato to combine the new PAT, PMT and PID of the selected program, in Ishida, and combine

them with the audio/video stream of the requested program. Kato is just a further explanation of the process that Ishida and Sullivan use to select and transmit its selected stream. The higher level of explanation produced in by Kato give a greater understanding of the process of selecting a single stream from multiple streams.

The combination of Ishida, Sullivan and Kato does not teach the received stream being transmitted in DVB- ASI format.

In an analogous art, Carlucci teaches the received stream being transmitted in DVB-ASI format (streams being sent and received in DVB-ASI standards, [0165]).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination of Ishida, Sullivan and Kato by allowing the system to receive streams in the DVB-ASI format as described in Carlucci's programming content processing system for the advantages of simultaneous delivery of programming to multiple client devices and multicasting.

The combination of Ishida, Sullivan, Kato and Carlucci does not teach a system that sends a single stream which is taken from a combination of streams based on user request.

In an analogous art, Rakib teaches a system that sends a single stream which is taken from a combination of streams based on user request (headend receiving multiple streams, headend receiving request from user and request being granted, col. 8, lines

63 – 66, col. 9, lines 20 – 27, col. 10, lines 43 – 45, col. 11, lines 64 – 67, col. 12, lines 26 - 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Ishida, Sullivan, Kato and Carlucci by including a system that extracts steams based on user request, as described in Rakib's transmitting system, for the advantages of controlling network congestion, and more specifically tailoring transmission to user needs.

Consider **claim 2,** the combination of Ishida, Sullivan, Kato Carlucci and Rakib teach:

The MPTS-SPTS separation device as set forth in claim 1, wherein the MPTS-SPTS separator includes: a PAT extractor/parser (Ishida; Fig. 2, 21d) for detecting a PAT packet (Ishida; By referring to the PAT and PMT in the service information, the PMT/PAT analyzers obtain the packet identifiers, col. 5, lines 27 - 30) in the MPEG-2 MPTS data provided from the receiving interface; a PMT extractor/parser (Ishida; Fig. 2, 21d) for analyzing PIDs (Program ID) of a PMT that correspond respectively to a plurality of programs existing in an MPEG-2 packet (Ishida; the PMT/PAT analyzers (21d) obtain the packet identifiers... of the designated programs, col. 5, lines 27 - 30); a PMT filter/selector (Ishida: demultiplexer 45, col. 8, line 32) for receiving information of a single program selected by a user (Ishida; CPU 67 (in the DSTB) controls the demultiplexer 45 based upon program selection data that has entered from a remote control, col. 8, lines 32-35); a packet terminator for removing packets associated with all programs other than the selected program

(Ishida; The PID filters 21a separate the video streams and audio streams of designated programs, col. 5, line 45-46); a PAT inserter(Kato: program control information(also referred to as the PAT, col. 2, line 52) aborting sections, col. 20, line 15) for changing the PAT, by deleting PIDs associated with said other programs from the PAT, while retaining said PIDs of a PMT that are associated with the selected program (program control information aborting sections, works by aborting only all program control information from the bit streams received by the remultiplexing apparatus and only multiplexing again the program information packet from the program generating section and the packet containing the newly generated all program control information, col. 21, lines 27- 32), and inserting the changed PAT into a stream corresponding to the selected single program (Kato; and transmits the remultiplexed packet as new program multiplexed information, col. 9, lines 21-22).

Consider **claim 4** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, wherein the packets removed are video (PID filters 21a separate the audio/video streams, col. 5, line 30), audio or data packets.

Consider **claim 5** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, said device being

part of a CATV (cable television) broadcast station (CATV center, col. 4, line 26) that receives at least one of VOD (video on demand)(audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

Consider **claim 6** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, said device being part of an Optical Line Termination (OLT)(CATV center, col. 4, line 26) that receives at least one of VOD (video on demand)(audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

Consider **claim 7** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, wherein the PAT extractor/parser refers to a PID (Packet Identification)(PAT/PMT analyzers obtain the packet identifiers, col. 5, lines 29-30) in an overhead section of the MPTS packet, so as to identify whether the MPTS packet is a PAT packet (The PAT, which is transmitted with a PID of 0, specifies the packet identifier of a TS packet, col. 1, lines 48-50).

Consider **claim 8** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, further comprising a user interface for receiving and displaying an analysis result (based on service information (contains PMT and PAT), displays receivable information on a display unit, col. 8, line 65-66) of the MPEG-2 MPTS packet from the PAT extractor/parser

(The SI (service information) processor 67a combines the partial service information sent from the DSTB control unit 14 and the service information, col. 8, line 59-60), and, when receiving information of said single program, providing the information to the PMT filter/selector (CPU 67 controls the demultiplexer 45 based upon program selection data, col. 8, lines 32-35).

Consider **claim 10** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 2, wherein the packets removed are video (PID filters 21a separate the audio/video streams, col. 5, line 30(Ishida)), audio or data packets

Consider **claim 11** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 8, said device being part of a CATV (cable television) broadcast station (CATV center, col. 4, line 26) that receives at least one of VOD (video on demand)(audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

Consider **claim 12** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 8, said device being part of an Optical Line Termination (OLT)(CATV center, col. 4, line 26) that receives at least one of VOD (video on demand)(audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

Consider **claim 13** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 8, wherein the user interface includes any one of an LCD (Liquid Crystal Display) and a CRT monitor (Display Unit, col. 8, line 66, since one of the main motives of the invention is to save cost, it is not out of the ordinary for the selected display to be a CRT or LCD because they are two of the cheapest available display technologies) of a general computer.

Consider **claim 16** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 1, wherein the MPTS-SPTS separation device is installed in a cable TV broadcast station of a wired cable system (CATV center, Fig. 1)

Consider **claim 17** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 1, wherein the MPTS-SPTS separation device is installed in an OLT (Optical Line Termination)(CATV center 1, col. 4, line 25-36) of an AON (Active Optical Network)(Bidirectional optical transmission path 2, col. 4, lines 34-35).

Consider **claim 18** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 1, wherein the

packets removed are video (PID filters 21a separate the audio/video streams, col. 5, line 30), audio or data packets.

Consider **claim 19** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 1, said device being part of a CATV (cable television) broadcast station (CATV center, col. 4, line 26) that receives at least one of VOD (video on demand)(audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

Consider **claim 20** Ishida teaches:

The MPTS-SPTS separation device as set forth in claim 1, said device being part of an Optical Line Termination (OLT)(CATV center 1, col. 4, line 25-36) that receives at least one of VOD (video on demand) (audio/video col. 4, lines 30-31), aerial and satellite broadcasts.

4. Claims 3,9, 14 and 15 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida, Sullivan, Kato and Carlucci as applied to claims 1, 2 and 8 above, and further in view of Pinder (U.S. Patent no: 7,065,213)

Consider **claim 3**:

The combination of Kato, Sullivan, Ishida and Carlucci teach a multiple stream separation device using a multiplexer for the stream separation but they do not teach the device using an FPGA for the separation.

In the same field of endeavor, Pinder teaches a system that has an input of a plurality of streams and outputs at least one transport stream. Pinder also teaches:

The MPTS-SPTS separation device as set forth in claim 2, wherein the MPTS-SPTS separator is implemented with an FPGA (Field Programmable Gate Array)(FPGA, col. 13, line 19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Pinder with the combination of Kato, Sullivan, Ishida and Carlucci because Pinder's invention is about ways to extract a single stream from multiple streams. Pinder's separation technique can be incorporated into the combination of Kato, Sullivan, Ishida and Carlucci by simply changing the multiplexers for the FPGA. FPGAs are programmable, which makes them flexible like software and also have the reliability of hardware.

Consider **claim 9**

The combination of Kato, Sullivan, Ishida and Carlucci teach a multiple stream separation device using a multiplexer for the stream separation but they do not teach the device using an FPGA for the separation.

In the same field of endeavor, Pinder teaches a system that has an input of a plurality of streams and outputs at least one transport stream. Pinder also teaches: The MPTS-SPTS separation device as set forth in claim 8, wherein the MPTS-SPTS separator is implemented with an FPGA (Field Programmable Gate Array)(FPGA, col. 13, line 19). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Pinder with the combination of Kato, Sullivan, Ishida and Carlucci because Pinder's invention is about ways to extract a single stream from multiple streams. Pinder's separation technique can be incorporated into the combination of Kato, Ishida, Sullivan and Carlucci by simply changing the multiplexers for the FPGA. FPGAs are programmable, which makes them flexible like software and also have the reliability of hardware.

Consider **claim 14**

The combination of Kato, Sullivan, Ishida and Carlucci teach a multiple stream separation device using a multiplexer for the stream separation but they do not teach the device using an integrated circuit for the separation.

In the same field of endeavor, Pinder teaches a system that has an input of a plurality of streams and outputs at least one transport stream. Pinder also teaches: The MPTS-SPTS separation device as set forth in claim 1, wherein the MPTS-SPTS separator is implemented with an integrated circuit (FPGA, col. 13, line 19, FPGAs are integrated circuits).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Pinder with the combination of Kato, Sullivan and Ishida because Pinder's invention is about ways to extract a single stream from multiple streams. Pinder's separation technique can be incorporated into the combination of Kato, Sullivan, Ishida and Carlucci by simply changing the multiplexers for an integrated circuit such as an FPGA. FPGAs are programmable, which makes them flexible like software and also have the reliability of hardware.

Consider **claim 15**, Pinder teaches: The MPTS-SPTS separation device as set forth in claim 14, wherein the MPTS-SPTS separator is implemented with an FPGA (Field Programmable Gate Array)(Pinder: FPGA, col. 13, line 19).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUGBENGA O. IDOWU whose telephone number is (571)270-1450. The examiner can normally be reached on Monday to Friday, 7am - 5pm Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Pendelton can be reached on 571 272 7527. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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